

I CLAIM:

1. A controller area network, comprising:
  - a CAN bus operable to facilitate CAN communications;
  - 5 a plurality of communication controllers in electrical communication with said CAN bus,
    - wherein each communication controller is operable in an active state to participate in CAN communications among said plurality of communication controllers via said CAN bus, and
    - 10 wherein each communication controller is inoperable in an inactive state to participate in CAN communications among said plurality of communication controllers via said CAN bus; and
    - a CAN wake-up controller in electrical communication with said CAN bus and at least one of said communication controllers,
    - 15 wherein said CAN wake-up controller is operable to switch said at least one of said communication controllers to the active state in response to an application of a non-interfering communication biasing signal to said CAN bus, and
    - wherein said CAN wake-up controller is operable to switch said at least one of said communication controllers to the inactive state in response to a termination of
    - 20 the application of the non-interfering communication biasing signal to said CAN bus.
2. The controller area network of claim 1, wherein said plurality of communication controllers includes a first communication controller operable to apply the non-interfering communication biasing signal to said CAN bus.
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3. The controller area network of claim 2, wherein said first communication controller is operable to receive an electrical communication of a wake-up signal indicative of a requirement to switch the first communication controller to the active state.

4. The controller area network of claim 3, wherein said first communication controller includes:

a processing module operable to be switched to the active state in response to the wake-up signal being electrically communicated to said first communication controller, wherein said processing module generates an enable signal in response to being switched to the active state; and

a transceiver module operable to be switched to the active state in response to a generation of the enable signal by said processing module,

wherein said transceiver module generates the non-interfering communication biasing signal in response to being switched to the active state.

5. The controller area network of claim 4, wherein said processing module includes a microprocessor operable in the active state to implement at least one CAN communication technique for facilitating a participation by said first communication controller in CAN communications among said plurality of communication controllers via said CAN bus.

6. The controller area network of claim 4, wherein said transceiver module includes:

5 a transceiver circuit operable in the active state to facilitate a participation in CAN communications by said first communication controller among said plurality of communication controllers via said CAN bus; and

an electronic switch operable to apply at least a portion of a voltage source serving as a power-up signal to said transceiver circuit in response to a generation of the enable signal by said processing module,

10 wherein said transceiver circuit is switched to the active state in response to the application of the power-up signal by said electronic switch to said transceiver circuit.

7. The controller area network of claim 4, wherein said transceiver module includes:

15 a bias signal generator operable to generate the non-interfering communication biasing signal in response to an application of a power-up signal to said bias signal generator; and

20 an electronic switch operable to apply at least a portion of a voltage source serving as the power-up signal to said bias signal generator in response to a generation of the enable signal by said processing module.

8. The controller area network of claim 2, wherein a first communication controller is operable to receive a wake-up signal indicative of a requirement to switch  
25 said first communication controller to the active state.

9. The controller area network of claim 8, wherein said first communication controller includes:

5 a processing module operable to be switched to the active state in response to the wake-up signal being electrically communicated to said first communication controller, wherein said processing module generates an enable signal in response to being switched to the active state; and

a transceiver module operable to be switched to the active state in response to a generation of the enable signal by said processing module.

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10. The controller area network of claim 9, wherein said processing module includes a microprocessor operable in the active state to implement at least one CAN communication technique for facilitating a participation by said first communication controller in CAN communications among said plurality of communication controllers  
15 via said CAN bus.

11. The controller area network of claim 9, wherein said transceiver module includes:

20 a transceiver circuit operable in the active state to facilitate a participation in CAN communications by said first communication controller among said plurality of communication controllers via said CAN bus; and

an electronic switch operable to apply at least a portion of a voltage source serving as a power-up signal to said transceiver circuit in response to a generation of the enable signal by said processing module,

25 wherein said transceiver circuit is switched to the active state in response to the application of the power-up signal by said electronic switch to said transceiver circuit.

12. The controller area network of claim 1, wherein said CAN wake-up controller includes:

5 a bias signal detection module operable to detect the application of the non-interfering communication biasing signal to said CAN bus; and

a wake-up switch module operable to generate a wake-up signal in response to a detection by said bias signal detection module of the application of the non-interfering communication biasing signal to said CAN bus.

10 13. The controller area network of claim 12, wherein a first communication controller is operable to receive an electrical communication from said CAN wake-up controller of the wake-up signal indicative of a requirement to switch the first communication controller to the active state.

15 14. The controller area network of claim 13, wherein said first communication controller includes:

a processing module operable to be switched to the active state in response to the wake-up signal being electrically communicated to said first communication controller,

20 wherein said processing module generates an enable signal in response to being switched to the active state; and

a transceiver module operable to be switched to the active state in response to a generation of the enable signal by said processing module.

15. The controller area network of claim 14, wherein said processing module includes a microprocessor operable in the active state to implement at least one CAN communication technique for facilitating a participation by said first communication  
5 controller in CAN communications among said plurality of communication controllers via said CAN bus.

16. The controller area network of claim 14, wherein said transceiver module includes:  
10 a transceiver circuit operable in the active state to facilitate a participation in CAN communications by said first communication controller among said plurality of communication controllers via said CAN bus; and  
an electronic switch operable to be operable to apply at least a portion of a voltage source serving as a power-up signal to said transceiver circuit in response to a generation  
15 of the enable signal by said processing module,  
wherein said transceiver circuit is switched to the active state in response to the application of the power-up signal by said electronic switch to said transceiver circuit.

20 17. The controller area network of claim 12, wherein said wake-up switch module includes a wake-up electronic switch operable to apply at least a portion of a voltage source as the wake-up signal to a first communication controller in response to a detection by said bias signal detection module of the application of the non-interfering communication biasing signal to said CAN bus.

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18. A method of operating a controller area network employing a plurality of communication controllers and a CAN bus, the method comprising:

applying a non-interfering communication biasing signal to the CAN bus; and

5 switching a first communication controller to an active state in response to the application of the non-interfering communication biasing signal to the CAN bus,

wherein the first communication controller switches to an active state to thereby participate in CAN communications among the plurality of communication controllers via said CAN bus.

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19. The method of claim 18, further comprising:

receiving an electrical communication of a wake-up signal indicative of a requirement for the first communication controller to be switched to the active state; and

15 switching a second communication controller to the active state in response to the electrical communication of the wake-up signal whereby the second communication controller generates the non-interfering communication biasing signal in response being switched to the active state.

20. The method of claim 18, further comprising:

20 detecting the application of the non-interfering communication biasing signal to the CAN bus; and

25 generating a wake-up signal in response to the detection of the application of the non-interfering communication biasing signal to the CAN bus, the wake-up signal being indicative of a requirement for the first communication controller to be switched to the active state.

21. A controller area network, comprising:

means for applying a non-interfering communication biasing signal to a CAN bus;

and

5 means for switching a first communication controller to an active state in response to the application of the non-interfering communication biasing signal to the CAN bus,

wherein the first communication controller switches to an active state to thereby participate in CAN communications among the plurality of communication controllers via said CAN bus.

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22. The controller area network of claim 21, further comprising:

means for receiving an electrical communication of a wake-up signal indicative of a requirement for the first communication controller to be switched to the active state; and

15 means for switching a second communication controller to the active state in response to the electrical communication of the wake-up signal whereby the second communication controller generates the non-interfering communication biasing signal in response being switched to the active state.

20 23. The controller area network of claim 21, further comprising:

means for detecting the application of the non-interfering communication biasing signal to the CAN bus; and

means for generating a wake-up signal in response to the detection of the application of the non-interfering communication biasing signal to the CAN bus, the  
25 wake-up signal being indicative of a requirement for the first communication controller to be switched to the active state.